

25

ends of a set of component data arrays included in the new memory chunk, each of the set of data arrays included in the new memory chunk corresponding to a respective component of the set of components included in the one or more entities that are classified under the new archetype.

11. The method of claim 10, wherein each component data array of the set of component data arrays is contiguous with a next component data array of the set of component data arrays.

12. The method of claim 10, further comprising based on a determination that the one of the set of archetypes corresponds to an existing archetype, populating an existing memory chunk of the set of memory chunks, wherein the populating of the existing memory chunk includes adding data from the set of components included in one or more entities of the set of entities that are classified under the existing archetype, the adding of the data including contiguously adding the data to ends of a set of component data arrays included in the existing memory chunk, each of the set of data arrays included in the existing memory chunk corresponding to a respective component of the set of components included in the one or more entities that are classified under the existing archetype.

13. The method of claim 10, wherein the adding of the new memory chunk to the set of memory chunks ensures that the set of memory chunks includes at least one memory chunk for each of the set of archetypes.

14. The method of claim 10, including receiving a first list of components, a second list of components, and an additional set of instructions for modifying components within the first list of components, the operations further comprising

searching the set of archetypes for one or more matching archetypes that includes all the components from the second list of components; and

using the additional set of instructions to modify one or more of the components included in the one or more matching archetypes based on a correspondence between the one or more components and the first list of components.

15. The method of claim 10, wherein each of the set of entities is created as a result of a game event occurring within the application.

16. The method of claim 10, the operations further comprising:

receiving a notification of a deletion of an entity of the set of entities;

removing data corresponding to the entity from each of the set of data arrays included in a memory chunk of the set of memory chunks corresponding to the entity; and ensuring that the memory chunk is contiguously packed by moving data corresponding to an additional entity from an end of each of the set of data arrays to locations of the removed data corresponding to the entity.

26

17. The method of claim 10, the operations further comprising:

determining that an entity of the set of entities within a first archetype has been modified;

based on a determination that the modified entity corresponds to an additional new archetype, adding the additional new archetype to the set of archetypes, building an additional new memory chunk for the additional new archetype, populating the additional new memory chunk with data from the set of components included in the modified entity, and deleting data corresponding to the modified entity from the first archetype;

based on a determination that the modified entity corresponds to an existing second archetype in an existing memory chunk, populating the existing memory chunk with data from the set of components included in the modified entity, and deleting data corresponding to the modified entity from the first archetype.

18. The method of claim 10, wherein the data from each of the set of components included in the one or more entities of the set of entities that are classified under the new archetype is extracted from variables of an object-oriented-programming object representing the component.

19. A non-transitory machine-readable medium storing a set of instructions that, when executed by a processor, cause the processor to perform operations comprising:

receiving a set of entities from a computer application, each of the set of entities including a set of components, wherein each component of the set of components has one type of a set of types;

classifying the set of entities into a set of archetypes, each archetype representing a different count of the set of components or a different combination of types of the set of components relative to other archetypes of the set of archetypes;

based on a determination that one of the set of archetypes corresponds to a new archetype, building a new memory chunk, adding the new memory chunk to the set of memory chunks, and populating the new memory chunk, wherein the populating of the new memory chunk includes adding data from the set of components included in one or more entities of the set of entities that are classified under the new archetype, the adding of the data including contiguously adding the data to ends of a set of component data arrays included in the new memory chunk, each of the set of data arrays included in the new memory chunk corresponding to a respective component of the set of components included in the one or more entities that are classified under the new archetype.

20. The non-transitory machine-readable medium of claim 19, wherein each component data array of the set of component data arrays is contiguous with a next component data array of the set of component data arrays.

* * * * *